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ABSTRACT

Sex typing among preschool children was investigated by means of a complete experimental design to test which factors maintain sex-typed behaviors, to test whether sex-typed behaviors are learned, and to reduce sex typing. The complete experimental design, it is maintained, allows investigators to focus on the consequences of sex typing rather than to accept the assumptions which restrained earlier research such as biological determinism, normal gender identification, adult roles and aspirations, and psychological adjustment. Findings indicate that cuing and labeling by teachers, social reinforcement (that is, attention and praise), teacher modeling, and even the physical location of the teacher in the classroom can reduce or eliminate sex typing of activities in which boys and girls participate, can influence independent activity, and can more than double the amount of cooperative play between the sexes. It is argued that reduction of sex typing has been extremely rapid, but generalization and maintenance has been minimal and that stimulus discrimination explains these effects. (Author/DB)

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ENVIRONMENTAL CONTROL OF SEX RELATED BEHAVIORS IN THE PRESCHOOL

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Observational studies indicate that sex-typed behavior is extensively taught and modelled in the child's environment, and that components of culturally prescribed sex roles may be learned by observation, by cueing and shaping, and by differential response of adults and peers to boys' and girls' sex-typed behavior. However, such documentary or descriptive studies can only suggest the mechanisms whereby sex roles are learned and maintained. Before we can conclude that modelled behaviors or differential reinforcement are actually determining the extent to which a child acquires and exhibits sex-typed behaviors, it is necessary to demonstrate environmental control directly, using experimental designs in which some environmental factor is systematically varied.

Although, logically, experimental or manipulative studies are necessary to support hypotheses dervied from observational studies on the environmental consequences or contingencies controlling sex-typed behavior, there has been, until recently, great reluctance on the part of researchers and clinicians alike to intervene, even in the most limited fashion, in the process of sex typing. Assumptions regarding sex typing, which restrained such studies were that (1) sex typing was ultimately biologically determined, (2) that is was, in all its aspects,

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necessary for normal gender identification, (3) that it was basic to sex-appropriate adult role and occupational aspirations, and (4) that strong conformity to "appropriate" male or female role behaviors was necessary for psychological adjustment (or, conversely, that "weak" sex-role adoption led to poor mental health).

In recent years, sex roles have been extensively reexamined. As culturally specific sets of behaviors they may have functions within the society which maintains them, but they may have negative as well as positive consequences both for the individual and for society in general. Today, rather than regarding all aspects of sex-typed behavior, or all sex differences in behavior and cognitive functioning, as necessarily positive and beneficial aspects of early conditioning, researchers are beginning to look directly at the consequences of this aspect of socialization. Freed from a theoretical model which insists that early sex typing of play behavior must be encouraged, it is possible to examine, for example, whether sex typing in the preschool leads to more behavioral problems in school for boys, or poorer development of visual-spatial problem-solving skills for girls. Thus the consequences of early sex typing are being extensively re-examined, and, in light of this, the specific factors which teach and maintain various aspects of sex typed behaviors are becoming increasingly of interest.

Demonstrations of environmental or stimulus control over sex-typed behavior may have both theoretical and applied significance. First, the control of sex-typed behaviors by environmental factors supports the hypothesis that these behaviors may, indeed, be learned and maintained by environmental factors. Second, experimental demonstrations that the specific factors identified in observational studies (e.g., differential modeling or contingencies for boys' and girls' behavior) do in fact control sex-typed behavior, suggests that these may be among the actual mechanisms whereby sex typing is learned and maintained

in the child's home and school environment. Third, demonstrations of experimental control suggest procedures which may be implemented in applied settings to reduce the amount of sex typing which occurs in these settings. Finally, methods for reducing the extent of sex-typed behavior may be used in further experimental research on the effects of sex typing on the development of problem behaviors, social and cognitive skills, and academic achievement.

Most of our studies on the control of various sex-typed social behaviors have been carried out in the laboratory school at the State University of New York at Binghamton over a 5 year period. The school includes 4 classes of 3 & 4 years old children, for a total enrollment of 52 children each year. Our general procedure is to use a complete experimental design in each classroom, either by dividing each of the classes into experimental and control groups or by using ABA reversal designs, in a time lagged fashion, that is, two classes remain in baseline conditions while the other two go through the experimental phase: with this design we are able to make both between and within group comparisons. All of our studies are thus replicated as complete experimental designs in at least four separate groups of 12-14 children. Some of our studies have been repeated in successive years, thus involving 8 lab school classes, or at other preschool facilities to examine the generality of experimental effects.

Care is taken that the goals of each study (which have included decreasing proximity seeking towards the teacher during free-play periods, decreasing physical aggression, increasing cooperative play with children of both sexes and broadening activity choices and experience with a variety of play materials) are consistent with the goals of the educational preschool program, and are understood by the parents of the children enrolled in the program. In addition,

certain limitations are placed on research designs (i.e., no reinforcement of sex-role-reversed behavior, or of any negatively valenced sex-role behavior, such as aggression, is ever carried out). Rather, all experimental studies focus on reducing specific aspect of role-related problem behaviors, such as aggression or on increasing behavioral variety and flexibility in social and play situations, by children of both sexes.

Because of the time limitations this afternoon, I am going to summarize our findings using this paradigm, and to discuss some of the conclusions regarding environmental control of sex typed behavior we have reached so far. We have focused our research primarily on three aspects of sex typed behavior in the classroom: independent and dependent behavior, sex typing of play activities and toy preferences, and sex segregated play (i.e. the tendency of girls and boys to play in same-sex peer groups). We have explored a variety of environmental factors which can control these aspects of sex typed play. We have found that cueing and labeling by teachers, social reinforcement (i.e. attention and praise), teacher modeling, and even the physical location of the teacher in the classroom can reduce or eliminate sex typing of the activities in which boys and girls participate, can determine the extent to which they work "on their own" or remain closely proximal to the teacher, and can more than double the amount that boys and girls play cooperatively in mixed sex play groups. In other words the various aspects of sex role behavior in the classroom which we have studied have all proved to be highly sensitive to environmental cues and reinforcement contingencies. Brief manipulations, sometimes as simple as having the teacher move into the area for block play, can within minutes, eliminate sex differences in behavior which have been consistently noted for an entire semester.

In all of these studies the reduction of sex typing, following the experimental manipulation, has been extremely rapid, showing less the pattern of a learning or acquisition curve that of strong stimulus control or discrimination.

Also, generalization of changes across time or settings has been minimal. Upon removal of specific cues or reinforcement for non-sex typed behavior, children return rapidly to baseline levels of sex differentiated play and social behavior, which again suggests a pattern of stimulus discrimination, rather than gradual extinction of the non-sex-typed behaviors.

These studies, which show rapid and dramatic environmental control of sex-typed behavior, have, I think some obvious implications for theories of sex-role development. Apparently, environmental cues and contingencies can be a major factor influencing sex-role conformity in young children. The phenomenon, though resembles stimulus discrimination, that is behavior which appears in the presence of specific cues or contingencies rather than condition of new responses.

My own interpretation is that cognitive factors may play a major part, in this phenomenon. The children appear to deal with various types of situational interventions or as "information" that it is acceptable for them to violate sex-role norms. That is, the teacher's reinforcement or cueing of non-sex types behavior may serve to give them "permission" to play with blocks or dolls, or play with children of the opposite sex. When such information is <u>not</u> present, they rely on previously learned patterns and individual styles of conformity. This suggests that, in the absence of explicit cues and contingencies for non-conformity or sex-role flexibility, sex-role conformity may be self-maintained, according to established individual patterns. This may happen even in the absence of direct reinforcement for sex-role conformity in the immediate situation.

It should, however, be pointed out that, to date, the experimental manipulations in studies designed to reduce sex typing in the classroom which we have completed have all been very brief, carried out during, at most, a 30-minute

play session over a period of four weeks or less. It is possible that more extensive environmental modifications in the classroom, in effect consistently for the entire school day over several weeks or months, might have greater and/or more generalized effects. In support of this hypothesis, a recent study by Bianchi and Bakeman (1978) indicates that children in "nontraditional" or "open" preschool classrooms, which encourage non-sex typed behavior, engage in more cross-sex cooperative play than children at "traditional" schools. Data which are now being analyzed from our own laboratory, do suggest that more long terms reinforcement of cross-sex cooperative play, over a six week period, does result in a gradual increase over the entire period, which does generalize across both time and settings.

In sum, our findings support strongly the possibility of reducing sex-typing in the preschool by environmental manipulations, and of the use of such interventions to study experimentally the effects of sex-typing of play and social behavior on other sex related phenomenon, such as specific cognitive skills. Further, our findings indicate the need for direct examination of the interaction of cognitive and environmental factors in the development and maintenance of sex typed behavior. We see these as important directions for future research.

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